

RAPPORT D'EXAMEN PRELIMINAIRE INTERNATIONAL

(article 36 et règle 70 du PCT)

Référence du dossier du déposant ou du mandataire	POUR SUITE A DONNER voir la notification de transmission du rapport d'examen préliminaire international (formulaire PCT/PEA/416)	
Demande internationale No. PCT/FR 03/50057	Date du dépôt international (jour/mois/année) 19.09.2003	Date de priorité (jour/mois/année) 20.09.2002
Classification internationale des brevets (CIB) ou à la fois classification nationale et CIB H01L21/445		
Déposant COMMISSARIAT A L'ENERGIE ATOMIQUE et al.		

1. Le présent rapport d'examen préliminaire international, établi par l'administration chargée de l'examen préliminaire international, est transmis au déposant conformément à l'article 36.



2. Ce RAPPORT comprend 4 feuilles, y compris la présente feuille de couverture.

- ☐ Il est accompagné d'ANNEXES, c'est-à-dire de feuilles de la description, des revendications ou des dessins qui ont été modifiées et qui servent de base au présent rapport ou de feuilles contenant des rectifications faites auprès de l'administration chargée de l'examen préliminaire international (voir la règle 70.16 et l'instruction 607 des Instructions administratives du PCT).

Ces annexes comprennent feuilles.

3. Le présent rapport contient des indications et les pages correspondantes relatives aux points suivants :

- I ☒ Base de l'opinion
- II ☐ Priorité
- III ☐ Absence de formulation d'opinion quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle
- IV ☐ Absence d'unité de l'invention
- V ☒ Déclaration motivée selon la règle 66.2(a)(ii) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration
- VI ☐ Certains documents cités
- VII ☐ Irrégularités dans la demande internationale
- VIII ☐ Observations relatives à la demande internationale

Date de présentation de la demande d'examen préliminaire internationale 14.04.2004	Date d'achèvement du présent rapport 15.12.2004
Nom et adresse postale de l'administration chargée de l'examen préliminaire international  Office européen des brevets - Gitschiner Str. 103 D-10958 Berlin Tél. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Fonctionnaire autorisé Le Meur, M-A N° de téléphone +49 30 25901-770 

**RAPPORT D'EXAMEN
PRÉLIMINAIRE INTERNATIONAL**

Demande internationale n°

PCT/FR 03/50057

6. Observations complémentaires, le cas échéant :

V. Déclaration motivée selon l'article 35(2) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration

1. Déclaration			
Nouveauté	Oui:	Revendications	1-8
	Non:	Revendications	
Activité inventive	Oui:	Revendications	1-8
	Non:	Revendications	
Possibilité d'application industrielle	Oui:	Revendications	1-8
	Non:	Revendications	

2. Citations et explications

voir feuille séparée

Domaine technique : fabrication d'électrode sur un matériau semi-conducteur II-VI.

Etat de la technique : Le document FR1143213 mentionne (page 1 colonne de gauche, ligne 40 - colonne de droite ligne 4) le dépôt électrochimique d'un métal sur matériau II-VI à partir d'une solution d'un sel de métal précieux (par exemple AuCl_3 ou PtCl_4) acidifiée ou non, présentant jusqu'à 20% de HCl.

Problème à résoudre : il s'agit de former des électrodes qui présentent à la fois de bonnes propriétés électriques mais aussi de une épaisseur et une capacité d'adhésion améliorées.

Solution : la revendication 1 mentionne comme solution au problème posé le dépôt électrochimique du métal de l'électrode à partir d'une solution d'un chlorure de ce métal d'acide chlorhydrique pur (37% en poids de molécules de gaz dans l'eau).

Nouveauté : Aucun des documents cités ne mentionne ni ne suggère l'emploi d'une solution de chlorure de métal dans de l'acide chlorhydrique pur pour le dépôt électrochimique du métal. L'objet de la revendication 1 (et des revendications 2-8 qui en dépendent) est donc nouveau (Article 33(2) PCT).

Inventivité : L'utilisation d'acide chlorhydrique "pur" selon la revendication 1 n'est nullement suggérée dans les documents cités. Elle permet l'utilisation de faibles concentrations de métal (souvent l'or ou le platine) et présente à ce titre un avantage sur l'état de l'art. L'objet de la revendication 1 (et des revendications 2-8 qui en dépendent) est donc inventif (Article 33(2) PCT).

Applicabilité industrielle : Les revendications 1-8 satisfont au critère d'applicabilité industrielle (Article 33(4) PCT).

Translation

PATENT COOPERATION TREATY

PCT/FR2003/050057



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B 14096 PV	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/050057	International filing date (<i>day/month/year</i>) 19 septembre 2003 (19.09.2003)	Priority date (<i>day/month/year</i>) 20 septembre 2002 (20.09.2002)
International Patent Classification (IPC) or national classification and IPC H01L 21/445		
Applicant COMMISSARIAT A L'ENERGIE ATOMIQUE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 14 avril 2004 (14.04.2004)	Date of completion of this report 15 December 2004 (15.12.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/050057

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
pages _____ 1-14 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____ 1-8 _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR 03/50057

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1 - 8	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 8	YES
	Claims		NO

2. Citations and explanations

Technical field: manufacturing an electrode on a type II-VI semiconductor material.

Prior art: document FR1143213 mentions (page 1, left-hand column, line 40 to right-hand column, line 4) the electrochemical deposition of a metal on a type II-VI material from a solution of a noble metal salt (for example, AuCl_3 or PtCl_4), acidified or not, comprising up to 20% HCl.

Problem addressed: to form electrodes having good electric properties but also improved thickness and adherence.

Solution: claim 1 proposes as a solution to the problem addressed the electrochemical deposition of the metal of which the electrode is formed from a solution of a chloride of said metal in pure hydrochloric acid (37% by weight of gas molecules in water).

Novelty: none of the citations mentions or suggests the use of a metal chloride solution in pure hydrochloric acid to carry out the electrochemical deposition of a metal. The subject matter of claim 1 (and of its dependent claims, claims 2-8) is thus novel (PCT Article 33(2)).

Inventive step: none of the citations suggests the use of "pure" hydrochloric acid as per claim 1. The use of pure hydrochloric acid makes it possible to use low metal concentrations (gold or platinum in many cases) and offers thus an advantage over the prior art. The subject matter of claim 1 (and of its dependent claims, claims 2-8) is therefore inventive (PCT Article 33(3)).

Industrial applicability: claims 1-8 meet the requirement of PCT Article 33(4) for industrial applicability.